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"Zur Kenntnis der Narkose," by Hans Winterstein, "Neue Versuche zur Physiologie der Befruchtung," by Emil Dungere, "Ueber die Reaktion des Blutserums der Wirbeltiere und die Reaktion der lebendigen Substanz im Allgemeinen," by Hans Friedenthal, and "Inanitionerscheinungen der Zelle," by Hans Wallengren.

The field of this periodical is a promising one, and from the contents and appearance of the first number it seems destined to fulfil the ideals which the editor has set himself. We wish it all success. μ.

NATÜRLICHE SCHÖPFUNGS-GESCHICHTE. Gemeinverständliche wissenschaftliche Vorträge über die Entwicklungs-Lehre. Von *Ernst Haeckel*, Professor an der Universität Jena. Zehnte verbesserte Auflage. Mit dem Porträt des Verfassers und mit 30 Tafeln, sowie zahlreichen Holzschnitten, Stammbäumen und Tabellen. Zwei Bände. Berlin: Druck und Verlag von Georg Reimer. 1902. Pages, lxxi, 368.

The fact that this popular and lucidly written work of Haeckel's has, in spite of the drawbacks for which it has been criticised, reached in thirty-four years its tenth edition of six thousand copies is at once proof of its sterling value and of the enduring interest of the public in the monistic doctrine of evolution. In literary quality and clearness Professor Haeckel's scientific exposition could hardly be excelled. It bears constantly on the broader philosophical problems and so never lags in interest. Adding to this the great skill shown by the author in the selection and construction of illustrations and diagrams, we may say that whatever the objections that have recently been raised to some of Professor Haeckel's personal scientific and philosophical theories, his work is destined to remain for a long time to come the most entertaining and most instructive natural history of creation. μ.

LES PHÉNOMÈNES ELECTRIQUES CHEZ LES ÊTRES VIVANTS. Scientia No. 13. Par *Maurice Mendelssohn*. Paris: C. Naud, Éditeur. 1902. Pages, 99. Price, 2 Francs.

MODE DE FONCTIONNEMENT ÉCONOMIQUE DE L'ORGANISME. Scientia No. 14. Par le *Dr. A. Imbert*, Professeur à la Faculté de Médecine de l'Université de Montpellier. Membre correspondant de l'Académie de Médecine. Paris: C. Naud, Éditeur. 1902. Pages, 97. Price, 2 Francs.

L'ÉLECTRICITÉ DÉDUITE DE L'EXPÉRIENCE ET RAMENÉE AU PRINCIPE DES TRAVAUX VIRTUELS. Scientia No. 19. Par *M.-E. Carvallo*, Docteur ès sciences agrégé de l'Université. Examineur de mécanique à l'École Polytechnique. Paris: C. Naud, Éditeur. 1902. Pages, 91. Price, 2 Francs.

We have frequently before called attention to these admirable *résumés* of the present state of scientific inquiry regarding special topics in physics, mathematics, biology, etc., published under the collective name of *Scientia*. These little works are artistically and accurately got up, and are in every way worthy of the attention of the scientific public.

The first of the three books above listed is concerned with electrical phenomena among living organisms. It treats of the history of the subject, of the electrical phenomena of the muscles and the nerves, of electric phenomena in man, of the electric phenomena of the skin and the glands, of the electric phenomena of the nervous centers and the sensory organs, of electric fishes, electric phenomena in vegetables, the theory of electrogenesis in living beings, and concludes with some general considerations on the rôle played by electric phenomena in the manifestations of life. The author says that there are many uncertainties still regarding the question of the relation of animal electricity to the physico-chemical manifestations of the organism, yet he maintains it can be affirmed quite positively that the electric phenomena produced in the living organism result from nutritive functions of the cellular life and take part in the physico-chemical changes going forward in a living organism during activity and even rest. The electric energy which is found in living organisms and which reposes there in a potential state, enters into all the nutritive functions of the cellular life, and constitutes one of the forms of energy of which the organism is the producer and transformer. Therefore, this organic electricity must necessarily obey, at least within certain limits, the immutable law of the conservation of energy and the equivalence of forces. In this respect the electric phenomena common to animals and plants, the author concludes, conform to the principle of the fundamental unity of life.

In the second work. Dr. Imbert has considered the *economic functioning* of living organisms,—the ratio of the energy engendered to the total work accomplished. In machines this ratio is always less than unity. The difficulty of the investigation with organisms is that it is not easy to discover the precise nature of the organic motor. We know, however, from the researches of Chaveau, that in the animate motor this ratio is variable, though increasing according as the muscle or organ producing the energy acts under less contraction. It is impracticable for us to go into details; we can only say that the author has reached the conclusion that it is possible to realise *voluntarily* the conditions that correspond to a minimum expenditure of energy relatively to the nature and the form of the motor acting.

The third work, by Dr. Carvallo, is entitled *Electricity Deduced from Experiments and Reduced to the Principle of Virtual Velocities*. Admirable as the work of Maxwell may be, the author remarks, it is nevertheless obscure and its commentators have not sufficiently elucidated it. Therefore another mode of attack seems desirable, that of the mechanical interpretation of the experimental laws. The author has announced two fundamental principles which are generalisations of the two laws of Kirchhoff and which make the electric field a system with connections obeying the principle of virtual velocities. He has reverted, therefore, to rational mechanics in his explanations. But an electric system is not a system the freedom of which is finite, but an indefinite *milieu* analogous to an incompressible fluid in which ponderable bodies float with the ordinary connec-

tions of rational mechanics. The equations of these connections and the equations of the virtual velocities are, as above remarked, of two kinds: the first relating to the movements of matter on the one hand, and the second to electricity on the other. The equations relative to electricity are the two fundamental laws of which Kirchhoff has announced a special case,—the law of the incompressibility and the equilibrium of electro-motor forces throughout their entire confines. The other equations are the ordinary equations of rational mechanics.  $\mu$ .

IGNATII ANTIOCHENI ET POLYCARPI SMYRNAEI EPISTULAE ET MARTYRIA. Edidit et adnotationibus instruxit *Adolfus Hilgenfeld*. Berolini: Sumtibus C. A. Schwetschke et Filii. 1902. Pages, xxiv, 384. Price, 10 Marks.

The present work is a complete annotated and critical edition of the letters and testimonials of Ignatius of Antioch and Polycarp of Smyrna. St. Ignatius died early in the second century, having, according to tradition, suffered martyrdom under Trajan. He is the reputed author of Epistles to the Ephesians, Romans, Magnesians, Philadelphians, and to Polycarp. Polycarp was the author of an epistle to the Philippians. The texts are mostly in Greek, and the learned and venerable editor, Dr. Adolf Hilgenfeld, has supplied a preface in Latin.

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A new edition of *Webster's International Dictionary* has been announced by the G. & C. Merriam Company, of Springfield, Mass. An entirely new set of plates for the work has been made, for incorporating 25,000 additional words, phrases, and definitions. The volume contains 2365 pages and 5000 illustrations. For practical and rapid reference the new edition of *Webster's International Dictionary* retains its distinctive advantages.

#### ERRATUM.

The author of the book *Phantasien eines Realisten*, noticed in the April *Monist*, p. 478, was erroneously given as Irvin Bauer. The real author is Joseph Popper, a prominent engineer of Vienna. Mr. Popper's writings on ethical as well as scientific subjects are well known in Germany and Austria and are all distinguished for their philosophical insight and the perfection of their literary form.